

A Single Electronic Mail System for North Carolina State Government



Michael F. Easley
Governor

George Bakolia
Chief Information Officer

November 2008



**State of North Carolina
Office of Information Technology Services**

Michael F. Easley, Governor

George Bakolia, State Chief Information Officer

November 1, 2008

The Honorable Vernon Malone
The Honorable Joe Tolson
Chairs, Joint Legislative Oversight Committee on Information Technology
N.C. General Assembly
Raleigh, N.C.

Dear Sen. Malone and Rep. Tolson:

I am proud to present this plan to transition Executive Branch agencies to a single e-mail system, as directed by the 2008 session of the N.C. General Assembly.

A single e-mail system has been a goal of North Carolina for many years. This plan shows that we could achieve that goal by the end of the next biennium. I am convinced that a minimal investment in this area would pay dividends to the state and its citizens for many years to come.

I would like to thank the Office of State Budget and Management for its assistance in preparation of this report.

Thank you for your support of our efforts to improve the use of information technology in the delivery of services to North Carolina.

Sincerely,

A handwritten signature in black ink, appearing to read "George Bakolia".

George Bakolia

Introduction

Electronic mail is a critical tool in the conduct of state business. State employees in the executive branch use e-mail to share documents and communicate with each other and with the public more than a million times a day. The state's e-mail servers receive more than five million incoming messages daily and deliver 300,000 messages after spam and viruses are filtered out. Those numbers do not include the General Assembly, the judicial system or the university system.

State government has been moving toward a single e-mail system for years. Under current plans, roughly two-thirds of executive branch employees will utilize an e-mail service offered by the Office of Information Technology Services (ITS) by mid-2009.

The N.C. General Assembly, in Section 6.14 of S.L. 2008-107, directed the State Chief Information Officer to develop a detailed plan to implement a single e-mail system for the executive branch by January 1, 2010. The Legislature said the plan must be developed in conjunction with agencies not utilizing the ITS e-mail service offering, and must specifically address issues identified by the agencies. (Appendix 1)

The following report was prepared in response to that directive.

Methodology

The State CIO named a project manager in August 2008 to oversee development of this plan and to provide a single point of contact for state agency CIOs. A memo from the State CIO to agency CIOs announced the project manager and asked agencies for their cooperation.

Members of the ITS e-mail team met with the 22 representatives of the 22 agencies in September and October. The team also compiled cost estimates and cost comparisons, using data from the Office of State Budget and Management. ITS staff also compiled the list of agency issues and concerns.

The Business Case

An analysis by the State Office of Budget and Management in May 2008 identified several benefits from a single e-mail system. A single system would enable agencies to devote their IT resources to their unique needs instead of basic infrastructure and make it easier to integrate web e-mail and calendar features.

The analysis also found that a single e-mail system would save more than \$7 million annually in improved productivity and cost savings by eliminating support for multiple e-mail systems. (Appendix 2)

State governments across the country have either moved to a single e-mail system, or are planning such a move. In a 2006 survey by the National Association of Chief Information Officers, 72 percent of the 35 states responding reported that they were consolidating e-mail systems.

Current Status

More than 33,000 subscribers use a centralized e-mail service offered by ITS. Customers include the Department of Health and Human Services, the Department of Environment, Health and Natural Resources, and local governments.

ITS has aggressively pursued customers for a new e-mail service based on the Microsoft Exchange platform. The Department of Transportation, with almost 9,000 accounts, was added this year. The Department of Commerce, Department of Insurance and Wildlife Resources Commission are in the pipeline for late 2008 and the first quarter of 2009. Those agencies will add 1,100 new users to the centralized e-mail service.

By mid-2009, when the old e-mail platform is retired, more than 43,000 users in 25 executive branch agencies and departments and local governments are expected to utilize the ITS service offering. Eleven agencies would continue to operate their own e-mail systems, serving about 19,000 accounts. One of the 11, the Department of Insurance, has tentatively agreed to use the ITS e-mail service. (Table 1)

Table 1

Status of transition to ITS Exchange e-mail service				
Legend				
NCMail Customers				
Non-NCMail Customers				
Agency	Start Date	No. of Accounts	Complete	
ITS	12/3/2007	640	X	
Alcoholic Beverage Control	2/7/2008	50	X	
NC Turnpike Authority	3/17/2008	20	X	
Office of State Budget and Management	3/31/2008	80	X	
Office of State Personnel	4/7/2008	125	X	
DOT - Phase I	4/28/2008	400	X	
Department of Administration	5/12/2008	550	X	
Health and Wellness Trust Fund	5/22/2008	30	X	
DOT - Phase II	5/26/2008	8300	X	
Agriculture - Phase I	6/9/2008	70	X	
Health and Human Services - Phase I	6/24/2008	10	X	
Department of Labor - Phase I	6/30/2008	8	X	
Office of Lieutenant Governor	7/21/2008	20	X	
Office of the Governor	7/21/2008	200	X	
Industrial Commission	8/4/2008	200	X	
Cultural Resources (multi phase)	9/15/2008	1170		
Juvenile Justice (multi phase)	9/15/2008	1850		
Health and Human Services (multi phase)	9/15/2008	13200		
Commissioner of Banks	9/29/2008	100	X	
Department of Labor - Phase II	9/29/2008	450		
State Controller	10/13/2008	300	X	
Department of Commerce	10/27/2008	350		
Environment, Health and Natural Resources	11/24/2008	4170		
Office of Administrative Hearings	12/1/2008	50		
Employment Security Commission	1/19/2009	1900		
Agriculture - Phase II	1/30/2009	920		
Wildlife Resources Commission	2/9/2009	348		
Department of Insurance (Tentative)	2/23/2009	402		
State Board of Elections	3/9/2009	121		
Counties	4/13/2009	5100		
OTHERS TBD	4/13/2009	2000		
Total Accounts		43134		
Total Migrations Complete		17		
Total Users Migrated		11103		
Agencies with no plans to move to ITS Exchange e-mail service				
Agency	Email System	No. of Accounts	Kickoff Mtg Date	
Crime Control and Public Safety*	Lotus Notes	170	9/26/2008	
Crime Control and Public Safety	Exchange	2498	9/26/2008	
Crime Control and Public Safety	Exchange	422	9/26/2008	
Department of Correction	Groupwise	10200	9/11/2008	
Department of Justice	Exchange	1500	9/18/2008	
Department of Public Instruction	Groupwise	803	10/27/2008	
State Auditor	Exchange	213	9/15/2008	
Department of Revenue	Groupwise	1719	9/12/2008	
Secretary of State	Groupwise	240	9/22/2008	
NC Ports Authority	Notes	220	9/23/2008	
Department of Community Colleges	Groupwise	250	9/25/2008	
State Treasurer	Exchange	600	9/22/2008	
* Has three e-mail systems		18835		
TOTAL		61969		

Costs of a Single E-mail System

The estimated non-recurring cost of transitioning the remaining executive branch agencies to a single e-mail system is \$686,749. Of that, \$480,925 would be agency costs (Table 2) and \$205,824 ITS costs (Table 3). The proposed IT Fund budget submitted by the State CIO to the Office of State Budget and Management includes a request to fund the non-recurring costs for the agencies and ITS.

The net increase in annual operating costs is estimated at \$222,708. Eight of the 11 agencies would see lower annual operating costs by moving to the ITS system. Only three would see increases. Two of the three—the Department of Public Instruction and the Office of Secretary of State—are storing large amounts of data on their e-mail servers and would be required to pay excess storage costs. Better document management by moving data off the e-mail servers, in keeping with the agency's records retention schedule, would lower their operating costs.

The third agency with a projected increase in annual operating costs is the Department of Correction, which reports spending \$4.39 per month for each user of its e-mail system. That figure is substantially lower than other agencies, which range from \$7.54 to \$17.80.

The cost of the ITS Exchange e-mail service is \$6.50 per month for each user. That includes 512 MB of storage, effective November 1. Previously, 100 MB of storage was included for each e-mail account. Additional storage costs 15 cents per 5 MB block per month.

The timing of the state budget and the size and complexity of the remaining eleven agencies make the January 1, 2010 deadline unrealistic. Passage of a new state budget in mid-2009 would give ITS and affected agencies only six months to transition to the single e-mail system. The Department of Correction, with more than 10,000 e-mail accounts, is the second largest in the state. The department also has locations scattered across North Carolina, increasing the time required to transition to a new e-mail system.

Table 2
Single E-mail System Cost

Agency	Current					Single System				
	No. of Accounts	Annual Cost	Cost Per User*	Avg Mailbox Size (MB)	Storage in excess of allowance	Annual Cost	Excess Storage Cost	Excess Storage Per User	One-time Cost	Annual Cost Difference
Crime Control and Public Safety	3090	\$310,273	\$8.37	10	0	\$241,020	0	0	\$77,250	(\$69,253)
Correction	10200	\$537,160	\$4.39	105	0	\$795,600	0	0	\$255,000	\$258,440
Department of Insurance*	402	\$42,713	\$8.85	30	0	\$31,356	0	0	\$10,050	(\$11,357)
Department of Justice	1500	\$132,562	\$7.36	175	0	\$117,000	0	0	\$37,500	(\$15,562)
Department of Public Instruction	803	\$93,625	\$9.72	1,076	564	\$62,634	\$163,041	\$16.92	\$20,075	\$132,050
State Auditor	213	\$25,300	\$9.90	445	0	\$16,614	0	0	\$5,325	(\$8,686)
Department of Revenue	1719	\$155,600	\$7.54	219	0	\$134,082	0	0	\$42,975	(\$21,518)
Secretary of State	240	\$22,878	\$7.94	1,000	488	\$18,720	\$42,163	\$14.64	\$6,000	\$38,005
Community College System	250	\$29,807	\$9.94	115	0	\$19,500	0	0	\$6,250	(\$10,307)
NC Ports Authority	220	\$47,000	\$17.80	750	238	\$17,160	\$18,849	\$7.14	\$5,500	(\$10,990)
Treasurer	600	104,914	\$14.57	478	0	\$46,800	0	0	\$15,000	(\$58,114)
Totals	19237	\$1,501,832	\$9.67 (Avg)			\$1,500,486	\$224,053		\$480,925	\$222,708

Notes: Based on OSBM analysis, May 2008

Cost of ITS Exchange e-mail and calendar service is \$6.50/month/account. Includes 512 MB storage.

* The Department of Insurance has tentatively agreed to subscribe to the ITS e-mail service.

Table 3
ITS Costs

ITS	Non-recurring	Annual Recurring
Hardware	\$205,824	\$343,248
Software		\$380,886
Storage		\$754,320
4 FTE		\$288,000
Antivirus/antispam		\$186,000
Total	\$205,824	\$1,952,454*

*No General Fund appropriation required. Cost recovered through e-mail subscription.

Agency concerns

The primary issue raised by state agencies was increased storage costs. To help alleviate that concern, the State CIO approved an increase in the amount of storage included with each e-mail account from 100 MB to 512 MB. As a result, only three agencies would face higher storage costs than they are currently paying. Better document management by removing attachments, such as Word documents and presentations, from e-mail servers, in keeping with agencies' records retention schedules, would substantially reduce or even eliminate the additional storage costs.

Federal security requirements, redundancy and the ability to use instant messaging were also raised as issues. The State CIO is confident that the ITS e-mail service offering can be configured to meet any applicable security requirements. Service Level Agreements between ITS and agencies will specify satisfactory service levels. Agencies that can provide a legitimate business case for instant messaging, as required by state policy, will be allowed to continue using IM, and ITS will assist them in procuring a cost-effective IM system.

The complete list of agency issues and concerns is in Appendix 3.

Appendices

Appendix 1

S.L. 2008-107

SINGLE ELECTRONIC MAIL SYSTEM

SECTION 6.14.(a) The State Chief Information Officer shall develop a detailed plan providing for the transition of all State agencies, departments, and institutions to a single statewide electronic mail system by January 1, 2010. This plan shall be developed in consultation with each organization not currently using the Office of Information Technology Services electronic mail system and shall specifically address any issues identified by these organizations.

SECTION 6.14.(b) The plan shall be presented to the Joint Legislative Oversight Committee on Information Technology by November 1, 2008, and may be implemented after consultation with the Committee.

SECTION 6.14.(c) In preparing the Governor's proposed budget for 2009-2011, the Office of State Budget and Management may utilize the plan required under subsection (b) of this section.

SECTION 6.14.(d) This section shall not apply to the General Assembly, the Judicial Department, or The University of North Carolina and its constituent institutions. These agencies may utilize the electronic mail service operated by the Office in accordance with the statutes, policies, and rules of the Office.

Appendix 2

May 2008 OSBM report on cost benefits

North Carolina eMail System Inventory & Cost

May, 2008

Benefits of Migrating to a Single email System

State of North Carolina Email System Inventory and Cost May 2008					Annual cost per user per mth
Agency	Mail System	# of email users	Total email system cost		
Admin Hearings	NCMail	47	10,871		19.27
Agriculture	NCMail	1,034	40,950		3.30
DOR	NCMail and Exchange	1,169	41,450		2.95
DENR	NCMail	4,170	303,267		6.06
DHHS	NCMail	14,022	1,487,945		8.84
DJJDP	NCMail	1,853	133,000		5.98
ESC	NCMail	1,872	131,176		5.84
Labor	NCMail	457	30,788		5.87
OSC	NCMail	294	13,526		3.83
SBOE	NCMail	121	20,800		14.33
Governor	NCMail	196	22,355		9.50
LT Governor	NCMail	19	2,000		8.77
sub total		25,234	2,238,130		7.39
OSBM	ITS Exchange	83	11,274		11.32
DOA	ITS Exchange	560	51,495		7.66
OSP	ITS Exchange	119	9,411		6.59
ITS	ITS Exchange	644	65,594		8.49
sub total		1,406	137,774		8.17
CCPS	Exchange/Lotus Notes	3,090	310,273		8.37
Commerce	Exchange	450	43,575		8.07
DOI	Exchange	402	42,714		8.85
DOJ	Exchange	1,650	132,562		6.70
OSA	Exchange	213	25,300		9.90
Treasurer	Exchange	600	104,914		14.57
NC Wildlife	Exchange	348	36,606		8.77
NC Educat. Lottery	Exchange	250	119,788		39.93
sub total		7,003	815,733		9.71
Corrections	Groupwise	10,200	537,160		4.39
DPI	Groupwise	800	47,643		4.96
Ind Commission	Groupwise	184	36,987		16.76
NCCCS	Groupwise	232	29,808		10.71
Revenue	Groupwise	1,719	155,800		7.54
SOS	Groupwise	240	22,878		7.94
sub total		13,375	830,086		5.17
DOT	Netscape	8,700	395,158		3.79
NC Cosmetic Arts	Smartmail	40	1,935		4.03
NC Psychology Bd	Charter / Time Warner	6	1,920		26.67
sub total		8,746	399,011		3.80
Total		55,764	4,420,734		\$6.61

SUMMARY

- 17+ email systems for 34 reporting agencies
- ~\$4.4M annual or \$6.61/user/mth expenditure
- Many agencies migrating to Exchange
- Exchange cost per user per month = \$6.50 (includes 100 mg storage)

• DOT: an estimate of downtime has been factored in to the \$3.79/user/mth cost to reflect the time lost by calendar users due to the old email system being taken down for 30 minutes every day for system maintenance.

DOT migrated to Exchange this past weekend

Benefits of a Single email System

A single enterprise e-mail platform offering (like MS Exchange) enables the following goals to be achieved:

- Enables agencies to devote their efforts to IT needs unique to their agencies versus basic infrastructure.
- Enables agencies to better align people, IT projects and IT budgets with their core missions.
- Facilitates a significant positioning step towards offering wireless e-mail and calendar services.
- Provides for a significantly improved/enhanced integrated web e-mail and calendar interface.
- Allows for (via Duet integration) the ability to make SAP (BEACON) business processes and information accessible to state employees through their familiar Microsoft Office environment, thereby improving productivity, compliance and decision-making relative to those processes
- Facilitates an easy rollout of Unified Messaging and Unified Communication features (e.g. voicemail & faxing) through Outlook client.
- Recommended approach for statewide archiving system will be less costly to the state with a single email system.

Benefits of a Single email System

The productivity & efficiencies driven by achievement of the above goals that will produce better up time, broader use of e-mail features (e.g. integrated calendaring), and cross agency efficiencies are quantified below (conservatively) in the form of time savings per day per user

	# of email users	time savings per day (minutes)	total minutes 240 work days	total hours per yr per user	average hourly rate	total annual user savings	Benefit execution factor	Annual Productivity & Efficiency Benefits
Exchange ITS	1406	0	0	0	\$25	\$0	n/a	0
Exchange Agencies	7,003	1	240	4	\$25	\$700,300	100%	\$700,300
Non Exchange Users	47,355	2	480	8	\$25	\$9,471,000	60%	\$5,682,600
Total	55,764							\$6,382,900

There should be cost savings driven by cost avoidance of supporting the old e-mail systems.

DOT (old system support)	\$50,000
DOT (down time avoidance)	\$240,000
Labor cost non ITS exchange agencies	\$964,567
sub total cost avoidance	\$1,254,567
Less cost of exchange admins.	\$267,667
Net cost avoidance	\$986,900

Must adjust benefits downward to reflect the cost of migrating email systems. Estimate below based on 25% of the non ITS Exchange population storing email outside the mail servers which will require 1 hour labor per desktop estimated below.

Total Population	55,764
Less ITS Exchange population	1,406
sub total	54,358
25% of non ITS Exchange population	13,590
\$25 per hour	\$339,738

Overall net annual benefits **\$7,030,062** 91% of this number is driven by efficiency / productivity increases for on board employees
3% of this number is driven by avoidance of employee down time

Appendix 3

Agency concerns

Crime Control and Public Safety

- Lack of communication between ITS Sr. Level Staff and Sr. Level CCPS executive staff (non-IT staff)
- Email is mission critical, wants ITS to put reliability/availability into SLA
- CCPS wants Layer 2 redundancy to both EDC and WDC. The more we consolidate services at ITS the more we need to improve network connectivity to our customers.
- Unified communications is a requirement. CCPS is already using Instant Messaging and Video Conferencing
- Possible integration with CRM and ALE

Department of Correction

- Storage costs will be higher with ITS
- Major desktop visit. Will require much coordination.

Department of Insurance

- RAD and RAD Trust employees need exemption from public records as they are not state employees but would/could be on the Exchange system.

Department of Justice

- Must have email archiving. Currently using EMC's EmailXtender
- Email encryption is a requirement for SBI

Department of Public Instruction

- Instant messaging would be a requirement for onboarding to Exchange
- Does Exchange provide all the value-added services that DPI is receiving from Groupwise?
- DPI wants a "full implementation" of Exchange (UM/UC)
- Due to high usages ITS storage rates will be much higher than current rates

State Auditor

- ITS storage rates will be much higher than current rates

Department of Revenue

- Can all federal requirements be met concerning various IRS guidelines including but not limited to 1075?
- DOR would like the email to be encrypted where it resides
- Possible separate relay server to prevent commingling
- ITS storage rates will be much higher than current rates

Secretary of State

- Due to high usages ITS storage rates will be much higher than current rates

Community College System

- NCCCS has the ability to see whether a user has “opened” an email or not directly from the Groupwise client. They want that ability in Exchange. This is not available natively in Exchange but may be able to be performed at the server level via the admin interface. More research would be required.
- ITS storage rates will be much higher than current rates

Treasurer

- ITS storage rates will be much higher than current rates